



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## DESCRIPTIONS OF NEW SPECIES OF POLYCHÆTA FROM THE SOUTH-EASTERN COAST OF MASSACHUSETTS.

BY J. PERCY MOORE.

*Arabella spinifera* sp. nov.

This species is known only from an incomplete worm consisting of the prostomium and fifty-one anterior segments and measuring 18 mm. long and 2 mm. in diameter, indicating a form less elongated than *Arabella opalina* Verrill.

Prostomium subconical, very slightly depressed, acute, more than twice as long as the basal width; sides straight; ventral longitudinal grooves close together and very faint. The noteworthy elongation of the prostomium may be abnormal, resulting from an injury at the base. Eyes two, rather large, conspicuous, situated on the dorsum close to the posterior border of the prostomium and separated by a space of less than one-third the basal width of the prostomium. Palps rudimentary, or at least not visible from the exterior, and enclosed by the margins of the lips.

Peristomium and somite II clearly separated by a deep furrow, both dorsally and ventrally; both simple apodous rings, the former slightly the longer. Posterior lip smooth. Foot-bearing somites all very short, about 5-8 times as wide as long, all clearly defined by distinct furrows, simple in structure, and decidedly more arched dorsally than ventrally, making a subterete body.

Parapodia begin on III. The first (Plate XIX, fig. 3) consists of a small but prominent notopodium, and a neurapodium which is divided into a short and stout, rounded presetal lobe supported by a single stout aciculum, and a similarly formed but slightly longer postsetal lobe, which is ventral and only slightly posterior to the former. Remaining parapodia (fig. 4) are prominent, and the postsetal or ventral lobe is elongated into a stout cirriform branchial organ containing a large vascular loop. For the length of the piece the parapodia undergo no change, except, first, a slight increase in size of the postsetal lobe and, second, a scarcely perceptible reduction of it in the last ten or twelve somites.

On the first two or three parapodia the acicula do not project beyond the surface, but the neuropodia of all others are supported by

two deep yellow acicula, the ends of which are exposed as in certain species of *Drilonereis* and *Aracoda*. The dorsalmost (fig. 5, *a*) is much the stouter and the end is blunt; the more ventral (fig. 5, *b*), besides being more slender, is prolonged into an acute spinous process, which is frequently broken off. Further caudad the larger aciculum becomes still stouter and more distinctly curved. Two or three very fine acicula reach to the base of the notopodial tubercle (fig. 4).

On the first somite the setæ are all in a small, nearly vertical fascicle between the two lobes, but they quickly rotate to a more oblique position and divide into an oblique supra-acicular group and a horizontal subacicular group. The former usually contains two pairs of doubly curved, very acute, limbate setæ with strongly striated stems and finely denticulated margins (fig. 6); these are turned with profile dorsal and ventral. Subacicular setæ are two or three in a horizontal row, turned so that in preparations of the parapodia both blades come into view symmetrically; the blades are shorter and the tips more prolonged than on the supra-acicular setæ (fig. 7). Dorsal setæ yellow, ventral nearly colorless.

Mandibles (fig. 2) brown, with exposed tips white. The two halves merely touch without uniting and then diverge both distally and proximally; dentinal plate not clearly differentiated from the carrier and nearly equal to it in length; the former curved, divergent, ending in a blunt white tip, without marginal teeth; the latter relatively short, broad at distal, tapering to proximal end, divergent. Maxillæ (fig. 1) brown, four pairs, all but the first pair (forcep jaws) alternating in position and more or less asymmetrical. Carriers of forceps filiform, about twice the length of the series of jaws; the two halves coalesced near the end, thickened, then constricted and again enlarged at the distal end; the forceps roughly triangular, with three stout, hooked teeth along the medial margin of the basal half and the ends strongly hooked. The first accessory plate on the left side longer than the forceps plate, with a large hooked distal tooth and seven stout teeth gradually becoming smaller toward the proximal end. All of the remaining jaw plates differ little in size, but become successively somewhat smaller toward the anterior end; each is supported by two broad divergent wings and the dentinal ridge bears 4-6 conspicuous, slender, claw-like teeth, one or two of the anterior usually being enlarged.

Color of preserved specimen: anterior end and parapodia rich yellow, pale farther back; the cuticle only slightly iridescent.

The type and only known specimen (A. N. S. No. 2313) was found among a lot of *Ninoe nigripes* Verrill dredged on the muddy bottom of the middle of Buzzard's Bay, Mass., the exact spot being unknown.

*Praxillella triciirrata* sp. nov.

What appears to be an undescribed species of *Praxillella* is imperfectly represented by several fragments, one consisting of the head and nine metastomial segments, of which the head and five segments are in process of regeneration, a second of somites VI to XII inclusive, and a third of the pygidium and eight preanal segments, the first five of which are setigerous.

This is a larger species than *P. zonalis* or *P. elongata*, having a diameter of 3 mm. and an estimated length of about 150 mm. The only known anterior end, being in process of regeneration, presents an abnormal appearance, somewhat approximating that of a *Nicomache* or *Lumbriclymene*. The entire regenerating region, consisting of the prostomium and six somites, has a length of a trifle more than 3 mm. and barely exceeds the sixth segment.

Head very short, with the cephalic plate and limbate margin scarcely developed. There is a rather thick, short and broad palpode, and running back from it a narrower but, relatively to the width of the head, broad median ridge bounded on each side by the deep and conspicuous sensory clefts, which again are bounded laterally by the low folds from which the limbate margins will develop, the whole forming a narrow area scarcely exceeding one-third of the entire width of the head and sloping steeply downward anteriorly. Mouth a rather large crescentic opening bounded by the narrow, furrowed persitomial lip. Peristomium very short and uniannular.

Somites II to VI are about twice as long as wide, slightly compressed, distinctly biannular, decreasing slightly in diameter to the last, and with the furrows, except  $\frac{I}{II}$  which is obscure, well defined. No distinct collars. The integuments of this region are soft and delicate and a careful examination discloses no developed setæ, though the setigerous glands are visible on some segments.

The first normally developed segment (VI) is cylindrical, quite as long as the preceding part of the worm, and 2-3 times as thick; VII and VIII are quite similar; IX and X are united into one joint about four times as long as wide and without any dividing furrow; XI is slightly longer than VIII, and XII still longer. Except  $\frac{IX}{X}$  all furrows in this region are deep and distinct; the segments somewhat depressed and distinctly flattened ventrally. On VI, VII and VIII the parapodia are situated one-third of the length of the segment from its anterior end, and all of the area anterior to them is occupied by a thick, whitish, glandular zone; a similar zone exists on IX, while on X a thick, rugous, ventral, glandular area of triangular form extends

forward from and between the posterior tori to an apex halfway to the tori of IX, whence a narrow median ventral ridge continues it forward to the glandular zone of IX; XI and XII have no glandular areas, though the tori form prominent swellings near their posterior ends.

The posterior segments are much contracted and distorted, but it is evident that they consist normally of a slender, very contractile, and wrinkled anterior portion, and a short, enlarged, posterior parapodial portion. They decrease in length regularly to the pygidium, which is preceded by three achæitous segments, of which the first closely resembles the last setigerous in size, and has posterior swellings representing the parapodia; the next is about one-half and the next one-fourth as long, widest posteriorly, where there are slight parapodial thickenings. The last two gradually widen into the base of the pygidium.

Pygidium (Plate XIX, fig. 8) with a short basal ring resembling the last achæitous segment, and bearing a thick posterior anal disk, the margin of which is provided with a median ventral cirrus and a pair of lateral, long, slender cirri each having a length of  $\frac{2}{3}$  the diameter of the disk, together with a circle of very regular prominent teeth of which five are between the median and each of the lateral cirri, and fifteen between the two latter on the dorsum. Anus occupying the centre of a low, regular, finely furrowed cone, and closed by a thick, fleshy papilla, which arises from its ventral margin and bends dorsad. The usual raised neural line runs for the entire length and passes on to the ventral cirrus.

Setæ and uncini are undeveloped on the regenerating segments. They are sessile on VI-IX and borne on small papillæ and prominent tori on all the others. Anteriorly the setæ form small but very prominent, vertical, linear tufts, which become more compact posteriorly. They are similar on all segments. Anterior tufts contain 10-12 longer, stouter, slightly curved, narrowly limbate setæ (fig. 9), with long, capillary tips, and nearly twice as many slender, capillary, wingless setæ, partly smooth and partly bipinnate, with fine hairs (fig. 10). Farther back they become longer but fewer and in more compact bundles, and most of the wingless setæ are smooth.

The anterior thoracic crochets are of course unknown. On other segments there are 15-19, the larger numbers behind. They are pale yellow, strongly striated, with rather slender stem, slightly constricted to form a neck, but lacking a distinct shoulder; an expanded head with a short, stout beak; a low crest with about four large and two or three small, diminishing teeth flanked by small fibrous teeth; and a conspicuous guard composed of 5-6 stout flattened hairs united

at the base and in contact with the lower surface of the beak to its tip, above which they arch and recurve in a bold circle (figs. 11 and 12).

Living color and tube unknown. Filled with eggs on Sept. 2. Taken on two occasions at Crab Ledge, east of Chatham, Mass., in 17–20 fathoms, on a stony and gravelly bottom, and not found elsewhere. (Type No. 1253, Academy of Natural Sciences of Phila.)

***Cirratulus parvus* sp. nov.**

Form very slender, terete, nearly linear, but most slender and attenuated posteriorly. Length 20–30 (usually about 25) mm., diameter about .6 mm. Number of segments 60–75.

Prostomium and peristomium united to form a distinct head (fig. 13). Prostomium broad and flat, broader than long, its width nearly two-thirds widest part of body, shaped like the blade of a gravedigger's shovel; the upper surface with a pair of obliquely transverse sensory slits at the place of union with the peristomium; the ventral surface somewhat thickened and divided by a longitudinal fissure. Eyes, one pair, conspicuous, rounded or slightly elongated obliquely, widely separated on middle of head, close to the sensory slits.

Peristomium a simple, somewhat swollen ring, scarcely differentiated from the prostomium above, but elsewhere clearly defined and forming a straight and smooth lip behind the relatively large mouth. Next two segments (II and III) simple rings with a diameter equal to the peristomium and a combined length equalling the entire length of the head.

Setigerous and branchiate somites begin with IV, which is slightly enlarged. They are at first quite short, but rapidly lengthen without corresponding increase in diameter until the length nearly or quite equals the diameter. Posteriorly they again diminish in length and at the caudal end is a short region of not clearly defined segments. All somites simple and uniannular, and the intersegmental furrows smooth and clear cut. Although the body is nearly terete the ventral surface is somewhat flattened and the parapodia somewhat projecting. Pygidium bearing a minute pointed projection below a nearly circular, dorsal anus.

Parapodia begin on IV and continue to posterior end; they are small, ventro-lateral projections bearing separate notopodial and neuropodial tubercles.

Branchial cirri also begin on IV just above the parapodia, and a pair occurs on each segment for about twenty, after which they are borne on every second or third segment and finally more scatteringly nearly to the posterior end. Cirri of the middle and posterior region are borne at the posterior margin of the segments some distance above the para-

podia. They are slender, filiform and round, often half as long as the body and with the base constricted so that they are easily detached.

Dorsal gills usually two pairs, sometimes a rudimentary third one on one or both sides, placed side by side on the dorsum of IV just above the parapodium and a little behind the branchial cirrus. They are slender at the base and swell to about twice the diameter of the branchial cirri, longer than the latter, longitudinally grooved for their entire length, and in contraction crenulate, wrinkled and more or less coiled in an open spiral.

Setæ and spines scarcely differ in form and structure from those of *Cirratulus grandis*. At the anterior end both notopodial and neuropodial tufts contain capillary setæ only—about 6–8 in each—of various lengths, the longest about two-thirds the body diameter. Spines appear in the neuropodium at about XII, and a few segments farther back each neuropodial tuft contains about four spines and four setæ, much shorter than on anterior segments (fig. 14). At the posterior end there are about two of each. In notopodial tufts the setæ become fewer and shorter from before backward, but usually spines appear only in those of the posterior one-third.

Color pale yellow or orange, usually with a greenish tinge, the integuments translucent, permitting the dark intestine to show through. Gills and cirri reddish from the contained blood.

Known only from the deeper waters of Vineyard and Nantucket Sounds, in from 10–19 fathoms, where it lives in colonies among the crevices of *Amarœcium pellucidum* and in passages of shells. Quite common in the latter at Crab Ledge, off Chatham. Nothing definite known of breeding habits, but specimens taken in late August contain small eggs. (Type No. 1657, Academy of Natural Sciences of Phila.)

This species is easily distinguished from young of *Cirratulus grandis* of the same size, which are frequently taken under stones at low water, by having but two achætous segments between the peristomium and first branchial segment. It bears a close superficial resemblance to *Cirratulus fragilis* Leidy, but differs decidedly in that the latter is described and figured as having bifid spines, only one apodous prebranchial segment, and the branchiæ beginning on the second setigerous segment. The species recorded under the name *Cirrhinereis fragilis* Quatrefages as having been dredged in Vineyard Sound, and considered by Verrill to be identical with *C. fragilis* Leidy, is probably the species here described.

***Amphitrite attenuata* sp. nov.**

Form slender, clavate, slightly swollen in the anterior thoracic

region, slender and tapering behind. Length 30 mm., diameter nearly 2 mm. at inflated part of thorax. Number of somites 80, IV-XXVIII setigerous.

Prostomium broad and depressed at the base, produced forward into a rather thick, simple lip, broadly rounded, entire and usually curved upward at the anterior margin, little folded about the mouth laterally and not meeting the lower lip; tentaculiferous ridge in contact with the lateral ends of the lip but separated from it by a slight notch, arched over the dorsum of the prostomium posteriorly and bearing in a continuous series about 30 coarse tentacles about one-half the length of the body. No eyes visible.

Mouth large, bounded below by a ventral lip which is divided by a transverse furrow into an inflated internal portion and a flat external portion, which is very broad and extends laterally beyond, but does not touch the upper lip. Peristomium a short, simple ring dorsally, expanded ventrally to form the lower lip. Somite II as long as the prostomium and ventral lip combined, its anterior margin without a true collar or lateral wings, but slightly produced as a free rim. Thoracic region distinctly segmented, the furrow complete and well defined; dorsal region most inflated at X-XII, thence gradually tapered to the abdomen. Abdomen attenuated, nearly quadrate in section, the dorsum only rounded; the segments becoming very short but all distinctly biannulated, the posterior borders wider and somewhat projecting. Pygidium a simple, rugous ring.

Ventral plates 14 (II-XV) all, except the first, sharply defined but in contact with one another; the anterior ones rectangular, 2-4 times as broad as long, the last four elliptical and one one-half times to twice as broad as long. Posterior to the ventral plates a ventral groove with a raised neural line continues to the posterior end.

Gills (fig. 15) three pairs, on II, III and IV, decreasing in size from before backwards, all small; when fully extended the first not more than one-half the thoracic diameter, each with a short trunk dividing near the base into 2-4 main branches, each of which then dichotomizes, usually three times and terminates in slender, tapering twigs.

Setigerous papillæ begin on IV just beneath the last gill, and are represented in a corresponding position on III by a minute achætous, knob-like papilla. Anteriorly they are prominent and at a high level; posteriorly they shift ventrad and become smaller. First torus on V, about one-half as long as the longest on XII, and one-sixth or one-seventh the body circumference. First five tori separated ventrally by about three times their length, those on XII by an interval about



equal to their length and succeeding ones by a less distance. Posterior to the region of ventral plates they become more elevated and prominent, but, though assuming a lappet-form, they never become largely free, even on posterior abdominal segments.

The characteristic setæ arise from short vertical lines in tufts of about a dozen arranged in double series. They (fig. 16) have remarkably broad limbi, those of the posterior row being shorter than and half again as broad as the one figured; the very slender and much attenuated tip is very long, and the fringe nearly obsolete and confined to the outer end on the long setæ, but better developed, though exceedingly delicate, on the short ones.

Uncini occur in single series pointing forward on V-X, in double series alternating in position and facing each other on XI-XXVIII, then again in single series to the end; there are about thirty-five on V, sixty on X and XI, thirty-six on XVIII and twenty on L. They are nearly colorless, with short, strongly convex bases deeply notched in front, the beak stout, the crest of four transverse rows of 3-9 teeth and the guard short and broad (fig. 17).

Color pale reddish salmon, deepest anteriorly, tentacles flesh color.

This species has been taken only on the piles of the New York Yacht Club wharf in Vineyard Haven, where it occurs sparingly below low water among *Cynthia* and *Amarœcium*; lives in small mud tubes and breeds in early July.

#### EXPLANATION OF PLATE XIX.

##### *Arabella spinifera*—figs. 1 to 7.

- Fig. 1.—Ventral view of maxillæ, the accessory jaws slightly turned by pressure.  $\times 56$ .
- Fig. 2.—Dorsal view of mandibles.  $\times 56$ .
- Fig. 3.—Outline of parapodium III, posterior aspect.  $\times 56$ .
- Fig. 4.—Anterior view of parapodium X.  $\times 56$ .
- Fig. 5.—Distal ends of the two acicula.  $\times 250$ .
- Fig. 6.—Profile view of a moderately elongated seta from X.  $\times 250$ .
- Fig. 7.—Face view of a short subacicular seta from X.  $\times 250$ .

##### *Praxillella tricirrata*—figs. 8-12.

- Fig. 8.—Pygidium and caudal achætous segments  $\times 9$
- Fig. 9.—Slender capillary seta from XI.  $\times 250$ .
- Fig. 10.—Bipinnate capillary seta from XI.  $\times 440$ .
- Fig. 11.—An entire crochet from XI.  $\times 82$ .
- Fig. 12.—End of crochet.  $\times 360$ .

##### *Cirratus parvus*—figs. 13 and 14.

- Fig. 13.—Anterior end showing the branchiæ and branchial cirri.  $\times 24$
- Fig. 14.—A tuft of notopodial cirri from the middle region.  $\times 250$ .

##### *Amphitrite attenuata*—figs. 15 to 17

- Fig. 15.—First gill of the left side.  $\times 24$ .
- Fig. 16.—A thoracic seta in  $\frac{1}{2}$  view.  $\times 360$
- Fig. 17.—A thoracic uncinus.  $\times 360$ .

